

## WHAT IS CLAIMED IS:

1. A system for measuring the profile of an object comprising:
  - a source creating a beam of electromagnetic energy;
  - an electromagnetic beam receiver spaced from said source for processing an output signal proportional to the girth of said object being measured;
  - a platform for providing rotational and vertical movement of said object being measured causing said object to obstruct a portion of said electromagnetic beam generated by said source; and
  - 10 a processor for processing said output signal from said electromagnetic beam receiver to form a composite profile of said object measured.
2. The system of claim 1 further comprising a motion unit for providing said rotation and vertical movement.
- 15 3. The system of claim 2 wherein said motion unit includes a vertical drive device for vertically displacing said platform.
- 20 4. The system of claim 3 where said vertical drive device includes a linear screw drive.
5. The system of claim 2 wherein said motion unit includes a rotational drive device for rotationally displacing said platform.

6. The system of claim 6 wherein said vertical drive device includes a gear driven mechanism.

7. The system of claim 1 further comprising an indexing station for 5 providing a plurality of objects to said platform, said indexing station automatically positions a respective object on said platform.

8. The system of claim 1 wherein said beam of electromagnetic energy is an electromagnetic laser beam.

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9. The system of claim 8 wherein said electromagnetic laser beam is generated by a class II laser light source.

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10. The system of claim 9 wherein said laser light source is a visible red light source.

11. The system of claim 10 wherein said visible red light source includes a wavelength of 670 nanometers.

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12. A system for measuring the profile of an object comprising:  
a source creating a beam of electromagnetic energy;  
an electromagnetic beam receiver spaced from said source for processing an output signal proportional to the girth of said object being measured;

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a platform for supporting said object;  
a motion unit for providing rotational and vertical movement of

said platform for disposing said object within said electromagnetic beam of energy, said object obstructs a portion of said electromagnetic beam generated by said source; and

5                   a processor for processing said output signal from said electromagnetic beam receiver to form a composite profile of said object measured.

13.   A method for measuring the profile of an object comprising the steps of:

10                   positioning said object on a platform of a motion unit;  
                      providing a source for generating a primary beam of electromagnetic energy of a predetermined width;  
                      vertically and rotationally disposing said object within said primary beam of electromagnetic energy using said vertical motion unit, said object obstructing a portion of said primary beam of electromagnetic energy;  
15                   receiving at least one secondary electromagnetic beam of energy within a receiving unit disposed opposite of said source, said at least one secondary electromagnetic beam of energy has a smaller width than said primary beam; and  
20                   processing an output signal proportional to a girth of said object being measured to form a composite profile of said object measured.

14.   The method of claim 13 wherein said object is vertically positioned within said primary beam of electromagnetic energy by a vertical drive device for profiling a respective plane of said object.

15. The method of claim 13 wherein said object is rotationally positioned within said primary beam of electromagnetic energy by a rotational drive device for profiling a respective view within a respective plane of said object.

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16. The method of claim 13 further comprising the step of transmitting said output signal to a computer for storing said composite profile.

10 17. The method of claim 13 wherein said processing step comprises measuring a void area within said receiving unit for determining said composite profile.

18. The method of claim 13 wherein said processing step comprises  
15 measuring at least one secondary electromagnetic beam and determining the difference between a width of said primary beam of electromagnetic energy and said at least one secondary electromagnetic beam for forming said composite profile.

20 19. The method of claim 13 further comprising the step of determining a perpendicularity of said object.

20. The method of claim 13 further comprising the step of determining a zero reference point for said object.

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